February 28, 2003

Patrick Kotter
Ecological Systems, Inc.
5232 West 79th Street
Indianapolis, Indiana
46268

Dear Mr. Kotter:

Re: Exempt Construction and Operation Status,
097-15468-00051

The application from Ecological Systems, Inc., received on February 19, 2003, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following boiler operation at a wastewater treatment facility, to be located at 5000 West 86th Street, Indianapolis, Indiana 46268, is classified as exempt from air pollution permit requirements:

One (1) natural gas fired Cleaver Brooks Scotch Fire Tube Boiler, with a maximum heat input of 10.5 million Btu per hour (MMBtu/hr).

The following conditions shall be applicable:

(a) Pursuant to 40 CFR Part 60 Subpart Dc, daily natural gas consumption for the Cleaver Brooks natural gas fired boiler, with a maximum capacity of 10.5 million Btu per hour (MMBtu/hr) shall be recorded. Records shall be retained for a period of at least five (5) years from the date of the generation of the measurement or record.

(b) Pursuant to 40 CFR 60 §60.48c(a), the owner or operator of this source shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by §60.7 of this rule.

(c) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:

(1) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

(d) Pursuant to 326 IAC 6-2 (Particulate Emissions Limitations for Sources of Indirect Heating), the10.5 MMBtu/hr natural gas fired boiler is subject 326 IAC 6-2 (Particulate Emissions Limitations for Sources of Indirect Heating). Pursuant to 326 IAC 6-2-4, the particulate matter (PM) emissions shall be limited to 0.59 pounds per million BTU (lbs/mm Btu) heat input based on the following equation:

$Pt = 1.09/Q^{0.26} = 1.09/10.5^{0.26} = 0.59$

where Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.

Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input.

This exemption is the first air approval issued to this source.

An application or notification shall be submitted in accordance with 326 IAC 2 to the OES and IDEM, Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source. If you have any questions, please feel free to contact Angelique Oliger at 327-2846 or aoliger@indygov.org.

Sincerely,

Original Singed by John B. Chavez
John B. Chavez, Administrator

aco

cc: Files
Air Compliance, Matt Mosier
IDEM, Mindy Hahn
Permits, Angelique Oliger

Indiana Department of Environmental Management
Office of Air Quality
and
City of Indianapolis
Office of Environmental Services

Technical Support Document (TSD) for an Exemption

Source Background and Description

Source Name:	Ecological Systems, Inc.
Source Location:	5000 West 86th Street, Indianapolis, Indiana 46268
County:	Marion
SIC Code:	4953
Operation Permit No.:	097-15468-00051
Permit Reviewer:	Angelique Oliger

The Office of Environmental Services (OES) has reviewed an application from Ecological Systems, Inc., relating to the construction and operation of the following emission unit:

One (1) natural gas firedCleaver Brooks Scotch fire Tube Boiler, with a maximum heat input of 10.5 million Btu per hour (MMBtu/hr).

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

A complete application for the purposes of this review was received on January 11, 2002.

Emission Calculations

See Appendix A of this document for detailed emissions calculations.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	0.3495
PM-10	0.3495
SO_2	0.0276
VOC	0.2529
CO	3.8632
NO_x	4.5990
HAPs*	0.0816

*See Appendix A page 2 for a detailed listing of individual HAPs.

Actual Emissions

No previous emission data has been received from the source.

County Attainment Status

The source is located in Marion County.

Pollutant	Status
PM-10	attainment
SO_2	maintenance attainment
NO_2	attainment
Ozone	maintenance attainment
CO	attainment
Lead	unclassifiable

(a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Marion County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Marion County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(c) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2, 40 CFR 52.21, or 326 IAC 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

New Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	0.3495
PM10	0.3495
SO_2	0.0276
VOC	0.2529
CO	3.8632
NO_x	4.5990
Single HAP	0.0812
Combination HAPs*	0.0816

*See Appendix A page 2 for a detailed listing of individual HAPs.

(a) This new source is not a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) each criteria pollutant is less than 100 tons per year,
(b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
(c) any combination of HAPs is less than 25 tons/year.

This is the first air approval issued to this source.

Federal Rule Applicability

(a) This source is subject to the New Source Performance Standard, 326 IAC 12, (40 CFR 60, Subpart Dc, since operation commenced after June 9, 1989 and the maximum design heat input capacity is greater than ten (10) MMBtu/hr but less than one hundred (100) MMBtu/hr.

(1) Daily natural gas consumption for the Cleaver Brooks natural gas fired boiler, with a maximum capacity of 10.5 million Btu per hour (MMBtu/hr) shall be recorded as per 40 CFR Part 60 Subpart Dc. Records shall be retained for a period of at least five (5) years from the date of the generation of the measurement or record.

(2) Pursuant to 40 CFR 60 §60.48c(a), the owner or operator of this source shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by §60.7 of this rule.

(b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 1-6 (Preventive Maintenance Plan)

This source is not subject to 326 IAC 1-6, because it is not required to obtain a permit under 326 IAC 2.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants)

This source is not subject to 326 IAC 2-4.1, because it is not a major source of hazardous air pollutants, as defined in 40 CFR 63.

326 IAC 2-6 (Emission Reporting)

This source is located in Marion County and its potential to emit any regulated pollutant is less than ten (10*)* tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of thirty percent (30%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-2-4 (Particulate Emissions Limitations for Sources of Indirect Heating)

The Cleaver Brooks natural gas fired boiler is subject to the provisions of 326 IAC 6-2-1(d) because it is located in Marion County and was constructed after September 21, 1983.

Particulate emissions from indirect heating facilities shall be limited by the following equation:

$Pt = 1.09/Q^{0.26} = 1.09/10.5^{0.26} = 0.59$

where Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.

Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input.

Therefore, particulate emissions from the Clever Brooks natural gas fired boiler shall not exceed 0.59 pounds per million Btu (lbs/MMBtu).

326 IAC 7-1 (Sulfur Dioxide Emission Limitations)

This rule does not apply to this source because the potential to emit of each individual unit is less than 25 tons per year or 10 pounds per hour of Sulfur Dioxide.

Conclusion

The construction and operation of the Clever Brooks natural gas fired boiler shall be exempt from air pollution control permit requirements.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler

Company Name: Ecological Systems, Inc.
Address City IN Zip: 5000 West 86th Street, Indianapolis, Indiana 46268
CP: 097-15468-00051
Reviewer: Angelique Oliger
Date: February 28, 2003

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
10.5000	92.0

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 *see below	5.5	84.0
Potential Emission in tons/yr	0.3495	0.3495	0.0276	4.5990	0.2529	3.8632

Methodology
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32
PM emission factors are condensable and filterable.
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton gasc99.wk4 9/95
See page 2 for HAPs emissions calculations. updated 6/00

Appendix A: Emissions Calculations
Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)
Gas Boiler
HAPs Emissions

Company Name: Ecological Systems, Inc.
Address, City IN Zip: 5000 West 86th Street, Indianapolis, Indiana 46268
CP: 097-15468-00051
Reviewer: Angelique Oliger
Date: Februray 28, 2003

AP-43 data given in lb/mmcf: To convert lb/mmcf-lb/mmbtu, divide by 1,020

HAPs - Metals

	Arsenic	Beryllium	Cadmium	Chromium	Lead
Emission Factor in lb/mmcf	2.0E-04	1.2E-05	1.1E-03	1.4E-03	0.0E+00
Emission Factor in lb/mmBtu	2.0E-07	1.2E-08	1.1E-06	1.4E-06	0.0E+00
Potential Emission in tons/yr	9.02E-06	5.41E-07	4.96E-05	6.31E-05	0.00E+00

HAPs - Metals (continued)

	Mercury	Manganese	Nickel	Selenium	**Total Haps Metals**
Emission Factor in lb/mmcf	2.6E-04	3.8E-04	2.1E-03	2.4E-05	
Emission Factor in lb/mmBtu	2.5E-07	3.7E-07	2.1E-06	2.4E-08	
Potential Emission in tons/yr	1.17E-05	1.71E-05	9.47E-05	1.08E-06	2.68E-04

HAPs - Organics

	Methylnapthale	3-Methylchlor anthrene	7,12-Dimethyl benz(a)anthra cene	Acenapthene	Acenapthylen e
Emission Factor in lb/mmcf	2.4E-05	1.8E-06	1.6E-06	1.8E-06	1.8E-06
Emission Factor in lb/mmBtu	2.4E-08	1.8E-09	1.6E-09	1.8E-09	1.8E-09
Potential Emission in tons/yr	1.08E-06	8.12E-08	7.21E-08	8.12E-08	8.12E-08

fo1&2com.wk4 9/95
updated 4/99

HAPs - Organics(continued)

	Anthracene	Benz(a)anthra cene	Benzene	Benzo(a)pyre ne	Benzo(b)flour anthene
Emission Factor in lb/mmcf	2.4E-06	1.8E-06	2.1E-03	1.2E-06	1.8E-06
Emission Factor in lb/mmBtu	2.4E-09	1.8E-09	2.1E-06	1.2E-09	1.8E-09
Potential Emission in tons/yr	1.08E-07	8.12E-08	9.47E-05	5.41E-08	8.12E-08

HAPs - Organics(continued)

	nzo(g,h,i)peryle	Benzo(k)fluora nthene	Chrysene	Dibenzo(a,h)a nthracene	Dichlorobenze ne
Emission Factor in lb/mmcf	1.2E-06	1.8E-06	1.8E-06	1.2E-06	1.2E-03
Emission Factor in lb/mmBtu	1.2E-09	1.8E-09	1.8E-09	1.2E-09	1.2E-06
Potential Emission in tons/yr	5.41E-08	8.12E-08	8.12E-08	5.41E-08	5.41E-05

HAPs - Organics(continued)

	Fluoranthene	Fluorene	Formaldehyde	Hexane	Indeno(1,2,3-c d)pyrene
Emission Factor in lb/mmcf	3.0E-06	2.8E-06	7.5E-06	1.8E+00	1.8E-06
Emission Factor in lb/mmBtu	2.9E-09	2.7E-09	7.4E-09	1.8E-03	1.8E-09
Potential Emission in tons/yr	1.35E-07	1.26E-07	3.38E-07	8.12E-02	8.12E-08

HAPs - Organics(continued)

	Naphthalene	Phenanthrene	**Total Haps Organics**	**Total Haps Combined**
Emission Factor in lb/mmcf	6.1E-04	1.7E-05		
Emission Factor in lb/mmBtu	6.0E-07	1.7E-08		
Potential Emission in tons/yr	2.75E-05	7.67E-07	8.13E-02	8.16E-02

Methodology
Potential Emissions (tons/year) = Throughput (mmBtu/hr)*Emission Factor (lb/mmBtu)*8,760 hrs/yr / 2,000 lb/ton